©Copyright by Croatian Cardiac Society. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (https://creativecommons.org/licenses/by/4.0/) which permits users to read, download, copy, distribute, print, search, or link to the full texts of these articles in any medium or format and to remix, transform and build upon the material, provided the original work is properly cited and any changes properly indicated.

Impella 5.5 – two cases, two outcomes: a single-center experience

Martina Vidak*,
Matea Anđelić,
Leonarda Berišić,
Biljana Hržić,
Ivica Benko

Dubrava University Hospital, Zagreb, Croatia

KEYWORDS: cardiogenic shock, mechanical circulatory support, clinical outcome, critical care.

CITATION: Cardiol Croat. 2026;21(11-12):376. | https://doi.org/10.15836/ccar2026.376

***ADDRESS FOR CORRESPONDENCE:** Martina Vidak, Klinička bolnica Dubrava, Avenija Gojka Šuška 6, HR-10000 Zagreb, Croatia. / Phone: +385-91-518-4130 / E-mail: martina.vidak1@gmail.com

ORCID: Martina Vidak, https://orcid.org/0009-0006-1973-8509 • Matea Anđelić, https://orcid.org/0009-0000-0806-7451 Leonarda Berišić, https://orcid.org/0009-0003-6902-5791 • Biljana Hržić, https://orcid.org/0000-0001-5441-0900 Ivica Benko, https://orcid.org/0000-0002-1878-0880

Introduction: Cardiogenic shock is defined as inadequate tissue perfusion resulting from primary myocardial dysfunction. The most common cause is acute heart failure in the setting of acute myocardial infarction. The diagnosis of cardiogenic shock is based on clinical history, physical examination, electrocardiography, echocardiography, and coronary angiography. Given its high mortality rate, cardiogenic shock requires early recognition, rapid hemodynamic stabilization, and an individualized therapeutic approach.[1] Mechanical circulatory support (MCS) plays an important role in the management of patients with severe cardiogenic shock.[2] The Impella 5.5 provides active left ventricular unloading while maintaining systemic perfusion.

Case report: Two patients requiring MCS with the Impella 5.5 due to severe cardiac dysfunction and hemodynamic instability are presented. In the first case, the Impella 5.5 was implanted as a bridge to heart transplantation. Following device implantation, hemodynamic stability and adequate systemic perfusion were achieved, allowing the patient to be successfully bridged to transplantation. This case highlights the potential role of the Impella 5.5 as temporary mechanical circulatory support in patients requiring advanced heart failure therapy. In the second case, despite the implementation of Impella 5.5 support and intensified medical therapy, recovery of cardiac function and sustained hemodynamic stability were not achieved, ultimately resulting in an unfavorable clinical outcome.

Conclusion: The use of the same MCS system in two patients demonstrates that similar treatment strategies do not necessarily result in comparable clinical outcomes. This single-center experience emphasizes the importance of early recognition of clinical deterioration and hemodynamic instability, continuous monitoring, and an individualized approach to the management of cardiogenic shock in patients supported with the Impella 5.5.

RECEIVED:
October 19, 2026
UPDATED:
November 4, 2026

LITERATURE

1. Zilberszac R, Heinz G. Kardiogener Schock [Cardiogenic shock]. Wien Klin Wochenschr. 2020 Jun;132(11-12):333-348. German. https://doi.org/10.1007/s00508-020-01612-1
2. Bernhardt AM, Blumer V, Vandenbriele C, Schrage B, Mody K, Pappalardo F, et al. Clinical management of the Impella 5.5 pump. J Heart Lung Transplant. 2025 Nov;44(11):1688-1702. https://doi.org/10.1016/j.healun.2025.06.008